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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/009,768	01/20/1998	TAKAYUKI KIJIMA	PMS245024	7858

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EXAMINER
MOE, AUNG SOE

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 04/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/009,768	Applicant(s) Kijima et al
	Examiner Aung S. Moe	Art Unit 2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Mar 25, 2002

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-37 is/are pending in the applica

4a) Of the above, claim(s) 1-13 and 25-37 is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 14-24 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on Jan 20, 1998 is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Election/Restriction

1. Applicant's election of Species III (Figs. 13-17) upon which claims 14-24 are readable as set forth in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Drawings

2. Figures 24-26 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, **such as "means" and "said," should be avoided**. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because the use of legal phraseology such as "means" should be avoided. The Examiner suggests changing "Control means" recited in line 6 of the Abstract to -- Control circuit--. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

5. Claims 15-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, it is unclear how "still picture recording or dynamic image processing" recited in lines 4+ relates to "still picture recording or dynamic image processing" recited in claim 15, line 19? If there is the same, the Examiner suggests changing "still picture recording or dynamic image processing" recited in lines 4+ in claim 14 to --said still picture recording or dynamic image processing--.

In claim 17, it is unclear how "each of n lines" recited in lines 3+ relates to "each of n lines" recited in claim 15, line 12+? If there is the same, the Examiner suggests changing "each of n lines" recited in lines 3+ in claim 17 to --said each of n lines--.

In claim 17, it is unclear how "still picture recording or dynamic image processing" recited in lines 4+ relates to "still picture recording or dynamic image processing" recited in claim 15, line 19? If there is the same, the Examiner suggests changing "still picture recording or dynamic

image processing" recited in lines 4+ in claim 17 to -- said still picture recording or dynamic image processing --.

In claim 20, it is unclear how "m lines" recited in line 4 relates to "m lines" recited in claim 15, line 13. If there is the same, the Examiner suggests changing "m lines" recited in line 4 in claim 20 to --said m lines--.

In claim 23, it is unclear how "AF, AE, and AWB control data" of second occurrence as recited in lines 4+ is related to the first occurrence of "AF, AE, and AWB control data" as recited the line 4? If there is the same, the Examiner suggests changing "AF, AE, and AWB control data" of the second occurrence to --said AF, AE, and AWB control data--.

In claim 24, it is unclear how "n lines" as recited in lines 3+ and line 9 of claim 24 relates to "n lines" as recited in lines 12+ of claim 15? If there is the same, the Examiner suggests changing "n lines" as recited in lines 3+ and line 9 of claim 24 to --said n lines--.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. Claims 14, 16, 17, 18 and 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Parulski et al. (U.S. 5,828,406).

Regarding claim 14, Parulski '406 an electronic imaging system (Fig. 2) comprising:

a solid-state image sensor (20) having a two-dimensional array of pixels capable of converting light incident thereon to electric signal (col. 3, lines 35+), the pixels being arranged in a plurality of horizontal lines, the lines being arranged vertically one under another (i.e., see Fig. 3A); and

control means (Fig. 1, the element 27) for selectively controlling a mode for sequential scan reading out pixel signals concerning the whole pixels of the solid-state image sensor for still picture recording (col. 6, lines 25+), and

a mode for reading out pixel signals (i.e., noted the preview or motion mode) sums each of n lines ($n \geq 2$, n being an integer) (i.e., noted from the Figs. 1 and 7, that the lines 1 and 2 are read out for the motion/preview mode and the read out signals are combined by the circuit 32; see col. 7, lines 15+, col. 8, lines 15+ and col. 9, lines 55-60) among m ($m \geq 3$, m being an integer) (i.e., see Fig. 7, the lines 1-4 may be considered as the 'm' lines) in k ($k \geq 6$, k being an integer) continuous lines of the solid-state image sensor (i.e., noted that the lines 1/2, 5/6, 11/12 and 15/16 are considered as the 'k' continuous lines) for still picture recording or dynamic image processing (i.e., the motion/preview mode).

Regarding claim 16, Parulski '406 discloses in which the control means (i.e., Fig. 1, the elements 27) controls a mode of reading a plurality of k line blocks each of k lines in the whole

lines (i.e., Figs. 5-7) for still picture recording or dynamic image processing (i.e., col. 6, lines 25+ and col. 7, lines 10+).

Regarding claim 17, Parulski '406 discloses in which image data obtained by reading out pixel signal sums each of n lines (i.e., noted the lines 1 and 2 of the Fig. 7; see col. 9, lines 55-60) among m vertically continuous lines (i.e., noted the lines 1-4 of Fig. 7) for still picture recording or dynamic image processing, is such that its color signal is line sequential data (i.e., Fig. 4, col. 9, lines 5+ and lines 60+).

Regarding claim 18, Parulski '406 discloses in which the solid-state image sensor has a line sequential filter as color filter (i.e., Fig. 4).

Regarding claim 22, Parulski '406 discloses in which dynamic image processed signal obtained in either of the above modes is used for AF, AE or AWB control data (col. 9, lines 1-10).

Regarding claim 23, Parulski '406 discloses in which dynamic image processed signal obtained in either of the above modes is used as AF, AE or AWB control data, and the AF, AE and AWB control data being calculated sequentially each in each frame (col. 4 lines 10+ and col. 9, lines 1+).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al. (U.S. 5,828,406) in view of Whipple et al. (U.S. 5,926,215).

Regarding claims 19 and 20, it is noted that although Parulski '406 shows the use of color filters in which the n addition lines are constituted by the color filter (i.e., see Figs. 6a/6b and 7) , and different n line addition filters are provided for every m lines (i.e., the R, G and B filter as shown in Figs. 4 and 7), Parulski '406 does not explicitly state that the n lines for addition are constituted by the same color filter as recited in claims 19 and 20.

However, the above mentioned claimed limitations are well-known in the art as evidenced by Whipple '215. In particular, Whipple '215 teaches the use of the color filters in the electronic imaging system wherein the n lines for addition are constituted by the same color filter (i.e., Figs. 3 and 5).

In view of this, having a system of Parulski '406 and then given the well-established teaching of Whipple '215, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Parulski '406 as taught by Whipple '215, since Whipple '215 states at col. 2, lines 41+ that such a modification would provide a faster frame rate while preserve the color pixel pattern and effective field of view of the image sensor thereof.

Regarding claim 21, the combination of Parulski '406 and Whipple '215 shows in which $m = 2\propto +1$ ($\propto$ being a positive integer) (i.e., see Fig. 7 of Parulski '406 and Fig. 5 of Whipple '215).

10. Claims 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. (U.S. 6,124,888) in view of Parulski et al. (U.S. 5,668,597).

Regarding claim 15, Terada '888 discloses an electronic imaging system (i.e., see Figs. 7-8 and 10) comprising:

a solid-state image sensor (i.e., Figs. 7/8, the element 103) having a two-dimensional array of pixels capable of converting light incident thereon to electric signal (i.e., see col. 2, lines 24+ and col. 8, lines 45+), the pixels being arranged in a plurality of horizontal lines, the lines being arranged vertically one under another (i.e., see Fig. 8); and

control means (Figs. 7 and 10; the elements 109, 108 and 107) for selectively controlling a mode for sequential scan reading out pixel signals concerning the whole pixels of the solid-state image sensor for still picture recording (i.e., noted the "whole pixel mode" as shown in Fig. 15; see col. 11, lines 25+ and col. 13, lines 20+),

a mode (i.e., the "skip mode") for reading out pixel signals from some of the lines of the solid-state image sensor for still picture recording or dynamic image processing (i.e., noted the "block mode" as shown in Fig. 15 for motion image processing; see col. 11, lines 25+ and col. 14, lines 35+), and

a mode (i.e., the "block mode") for reading out pixel signals from some of the lines of the solid-state image sensor for still picture recording or dynamic image processing (i.e., noted the "block mode" as shown in Fig. 15 for motion image processing; see col. 11, lines 25+ and col. 13, lines 60+).

Furthermore, it is noted that the third to eight embodiments of Terada '888 does not explicitly state that the "skip mode" is performed by reading out pixel signals sums of n lines among m lines in k ($k \geq 6$, k being an integer) continuous lines of the solid-state image sensor for still picture recording or dynamic image processing.

However, Terada '888 further teaches that the above mentioned claimed limitations are well-known in the art to modify the imaging system as disclosed in the third to eight embodiments. For example, Terada '888 teaches in the ninth embodiment (i.e., Figs. 25-27B) that in order to lower substantially the response of the opening and prevent the generation of the return strain (i.e., see col. 24, lines 35+ of Terada '888), it would have been obvious to modify the "skip mode" of the imaging system by reading out pixel signals sums of n lines among m lines in k ($k \geq 6$, k being an integer) continuous lines of the solid-state image sensor for still picture recording or dynamic image processing (i.e., In Figs 27A, it is noted that lines 1 and 3 out of lines 1-3 are added to obtain the line 1 of Fig. 27, and wherein the total of more than 6 output lines may be provided for the motion image processing during the "skip mode"; see col. 26, lines 30+ and col. 28, lines 20+ of Terada '888).

Therefore, having the well-established teaching as discussed in the ninth embodiment of Terada '888, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the "skip mode" of the imaging system as shown in Fig. 7 as suggested in the ninth embodiment of Terada '888, since Terada '888 clearly states at col. 24,

lines 36+ that such a modification would lower the response of opening and prevent the generation of the return strain thereof.

Furthermore, with respect to the "block mode", it is noted that although Terada '888 does not explicitly state the particular read out process, such that reading out pixel signal sums each of n ($n \geq 2$, n being an integer) lines among m ($m \geq 3$, m being an integer) lines of the solid-state image sensor, for still picture recording or dynamic image processing, such limitations are also well-known in the art as evidenced by Parulski '597.

In particular, Parulski '597 teaches (i.e., Figs. 1, 4 and 10) that the use of "block mode", wherein pixel signal sums each of n ($n \geq 2$, n being an integer) lines among m ($m \geq 3$, m being an integer) lines of the solid-state image sensor for dynamic image process (i.e., noted that the sum of each lines 1 and 2 among the lines 1-4 of the pixel signals of block "66" may be read out as shown in Figs. 7A/7B and 10/11) so that the block of image signals may be read out for the purposed enabling rapid focus of the imaging system (i.e., see col. 3, lines 25+ and col. 7, lines 4+ of Parulski '597).

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Terada '888 as taught by Parulski '597, since Parulski '597 states at col. 3, lines 25+ that such a modification would decrease the required clock rate while enabling rapid focuses of the imaging system thereof.

Regarding claim 24, the combination of Terada '888 and Parulski '597 discloses in which the control means (Fig. 7, the elements 108, 106 and 107 of Terada '888) selects a mode of

reading out pixel signal sums each of n lines among m vertical continuous lines when obtaining dynamic image processed signal to be displayed on a display (i.e., the element 106 of Terada '888) provided in it, to be supplied to an external display provided outside it **or** to be used as AE or AWB control data, and

selects a mode (i.e., see Figs. 7, 10 and 15, the elements 109, 108 and 107 of Terada '888) of reading out pixel signals of n lines among every m vertically continuous lines in k continuous lines (i.e., col. 28, lines 20+ of Terada '888)when obtaining dynamic image processed signal to be used as AF or AE control data (i.e., col. 6, lines 25+ of Parulski '597).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hamasaki '952 shows an electronic imaging apparatus having a two-dimensional solid state sensor and extracting pixel signals added at the interval of q lines continued in the vertical direction to record a dynamic image thereof.

a. Tojo '137 shows the use of a two-dimensional solid state imaging device having a mode to extract pixel signals for n lines at intervals of m lines in the vertical direction to record a still image process or a dynamic image process and another mode for extracting pixel signals from the intervals of q lines continued in the vertical direction to record a still image or perform a dynamic image process (i.e., Figs. 5-8).

b. Iizuka '192 shows an electronic imaging apparatus having a mode for causing the solid state imaging device to add n lines at intervals of m lines in the vertical direction and a mode for causing the solid state imaging device to extract pixel signals added at intervals of q lines continued in the vertical direction to perform a dynamic image process (Figs. 3-8B).

c. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Aung S. Moe** whose telephone number is **(703) 306-3021.** If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wendy Garber**, can be reach on (703) 305-4929.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the customer service number **(703) 306-0377.**

A. Moe

April 10, 2002

AUNG S. MOE
PATENT EXAMINER